Rana Waqar Tabish

Micro/Molecular Biology | Bioinformatics

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Work Experience

Graduate Research Assistant — Aug 2022 - Present
Auburn University

- Investigating nutritional strategies to optimize performance of broilers under a mild enteric challenge using multi-omics approaches
- Conducted and contributed to multiple live bird experiments
- Performed intestinal microbiome and mucosal transcriptome analysis to understand disease mechanisms

Graduate Teaching Assistant — Aug 2024 - Dec 2024
Auburn University

Course: Advanced Poultry Health (POUL 5080-6080)

- Supported course delivery and discussions on advanced poultry health topics
- Graded case reports and review articles from undergraduate and graduate students and provided feedback

Poultry Veterinarian — Oct 2020 - Jul 2022
Ibrahim Poultry, Pakistan

- Diagnosed diseases, devised treatment regimens and structured vaccination protocols for various viral, bacterial and fungal diseases
- Effectively supervised personnel effectively and improved broiler production performance parameters

Undergraduate Research Assistant — Jun 2019 - Dec 2019
University of Veterinary and Animal Sciences

- Contributed to the development of a farmer-friendly molecular assay for the detection of anthelmintic resistance in stomach worms, *Haemonchus contortus*

Education

Doctor of Philosophy in Poultry Science — Aug 2022 - Present
Auburn University

Graduate Certificate in Bioinformatics — Aug 2022 - Dec 2024
Auburn University

Doctor of Veterinary Medicine (DVM) — Oct 2015 - Jul 2020
University of Veterinary and Animal Sciences

PhD Projects and Collaborations (Prospective Publications)

1. Cross-sectional analysis of intestinal microbiota and mucosal gene expression in broilers under different coccidiosis and necrotic enteritis challenge models **Rana Waqar Tabish**, Nelsa Beckman, Samuel Rochell, Wilmer Pacheco, Rochell, William Dozier, Klint McCafferty, Ruediger Hauck
2. Evaluation of different coccidiosis and necrotic enteritis challenge models on broiler performance, nutrient digestibility, and intestinal mucus production Nelsa Beckman, **Rana Waqar Tabish**, Wilmer Pacheco, Samuel Rochell, William Dozier, Klint McCafferty, Ruediger Hauck, Samuel Rochell
3. Metagenomic analysis of microbial populations in the broiler jejunum and cecum fed diets with varying levels and concentrations of dietary fiber under a mild enteric challenge. **Rana Waqar Tabish**, Yang Lin, Matthew Bailey, William Dozier, Klint McCafferty, Samuel Rochell, Ruediger Hauck
4. Transcriptomic profiles of jejunal and cecal mucosa and submucosa in broilers fed diets with varying levels and concentrations of dietary fiber under a mild enteric challenge. **Rana Waqar Tabish**, Yang Lin, Matthew Bailey, William Dozier, Klint McCafferty, Samuel Rochell, Ruediger Hauck
5. Effect of nanosilver-treated feed on intestinal microbiota, jejunal lesion scores and the production efficiency in broiler flock subjected to subclinical necrotic enteritis challenge. Pankaj Gaonkar, **Rana Waqar Tabish**, Ruediger Hauck, Laura Huber
6. Effect of different calcium concentrations and limestone particle sizes in broiler diets on jejunal microbiota and jejunal and cecal mucosal transcriptome under a mild enteric challenge **Rana Waqar Tabish**, Joseph Gulizia, Jose Vargas, Jose Hernandez, Cristina Simões, Eva Guzman, Wilmer Pacheco, Samuel Rochell, Matthew Bailey, William Dozier, Klint McCafferty, Ruediger Hauck

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Wet Lab Skills

a. Bacterial isolation and purification
b. DNA & RNA extractions
c. PCR
d. Spectrophotometry
e. Preparation and maintenance of primary cells lines
f. Experience with necropsy of animal models & embryos
g. Necrotic enteritis lesion scoring
h. Microscopy
i. 16S microbiome library prep

Bioinformatics Skills

a. Transcriptome profiling
b. Metagenomic characteriztion
c. 16S Microbiome analysis
d. Protein-protein Interaction and Network Analysis (cytoscape)

Programming Skills

Clouds

a. Alabama Supercomputer Authority
b. Easley Cluster

Programming Languages

a. Bash
b. R

Awards

2025 AAAP Foundation Y.M. Saif Poultry Scholarship — Jan 2025

Higher Education Commission Academic Scholarship from HEC Pakistan — Jan 2016 - May 2020

Student Merit Scholarship (Twice) from University of Veterinary and Animal Sciences — 2017 - 2019

I hereby declare that all the information contained in this resume is in accordance accurate to the best of my knowledge. References can be provided upon request